

# Communication and Cooperation

On the Cooperative Origins of  
Language



# Cooperation and human uniqueness



“If we are to understand the **ultimate origins of human communication** ... we must look outside communication itself and into **human cooperation more generally**. It turns out that **human cooperation is unique in the animal kingdom** in many ways, **both structurally and motivationally.**” (Tomasello 2008)



# The Cooperative Communication Hypothesis



Humans, and only humans, evolved to use language because only humans possess the temperament to engage in ‘**Gricean cooperative communication**’ (Tomasello 2008)

- Cooperative motivations are **necessary** (although **not sufficient**) for language use

# Why does Tomasello think this?

On views stemming from Grice (1989), communication is:

- a joint action
- in which interlocutors engage in cooperative reasoning
- to achieve shared goals

**Jankovic (2013):** The most minimal unit of communicative interaction ‘involves cooperation between two participants where the role of one ... is to (e.g.) speak to the other and of the other to cooperatively attend to what the speaker says’.



# The Cooperative Communication Hypothesis

1. Structural Claim (Tomasello 2008; Jankovic 2013): Communication is a form of joint action

“Standard Gricean communication is an essentially intentional collective action type (an EIC). Like line dancing or playing catch, it is a type of action that can only be performed by the utterer and the audience acting together intentionally.” (Jankovic 2013)

2. Motivational claim (Tomasello, 2008): Utterances are produced with pro-social motivations

Communication succeeds because “participants know together and trust together the cooperative motivations involved” (Tomasello 2008)

On Tomasello’s (2008) view, claim (1) entails (2).

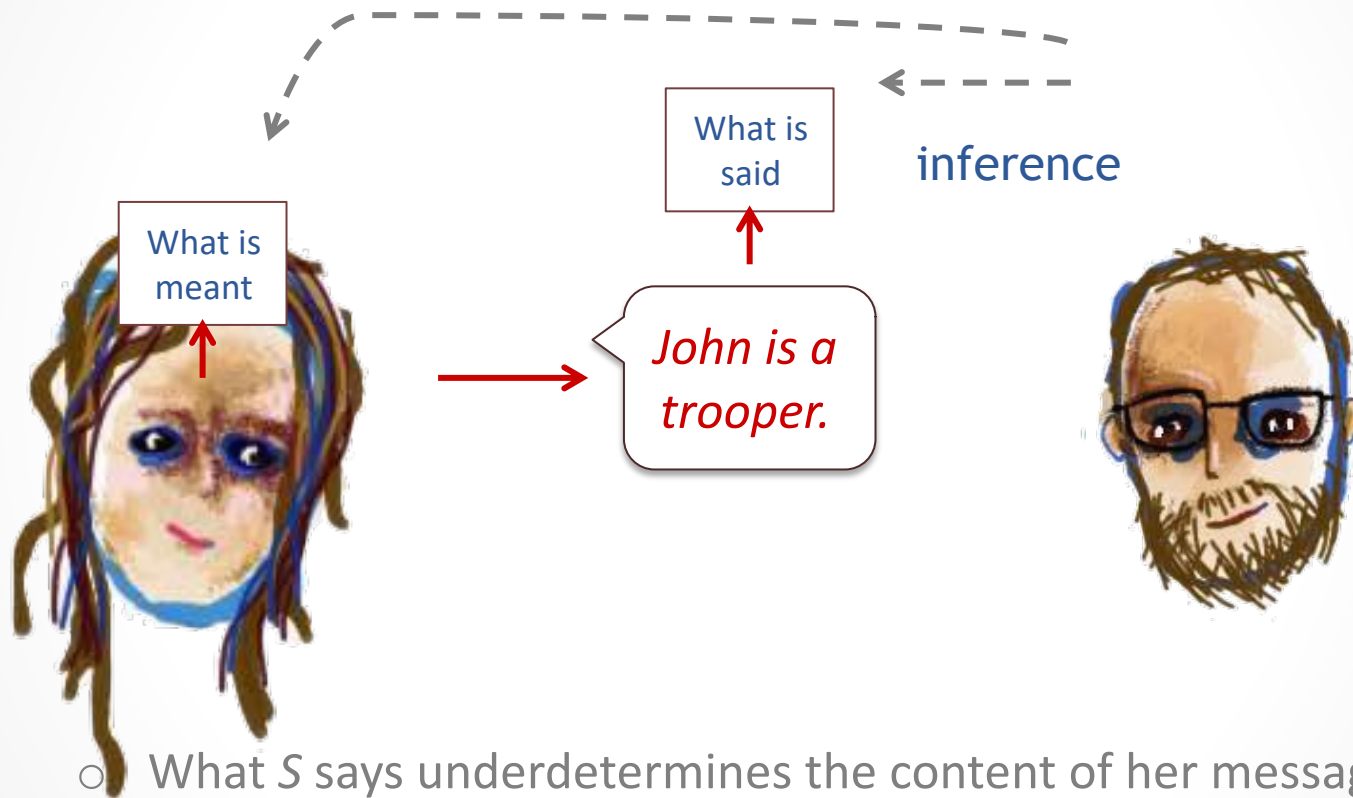
# The under-determination of meaning

Sperber & Wilson (1996), via Grice (1989)

- Sentences under-determine the propositions they are used to express. E.g. consider:
  - "John is a trooper."
    - John works hard in difficult circumstances.
    - John is a member of the Queen's Guard.

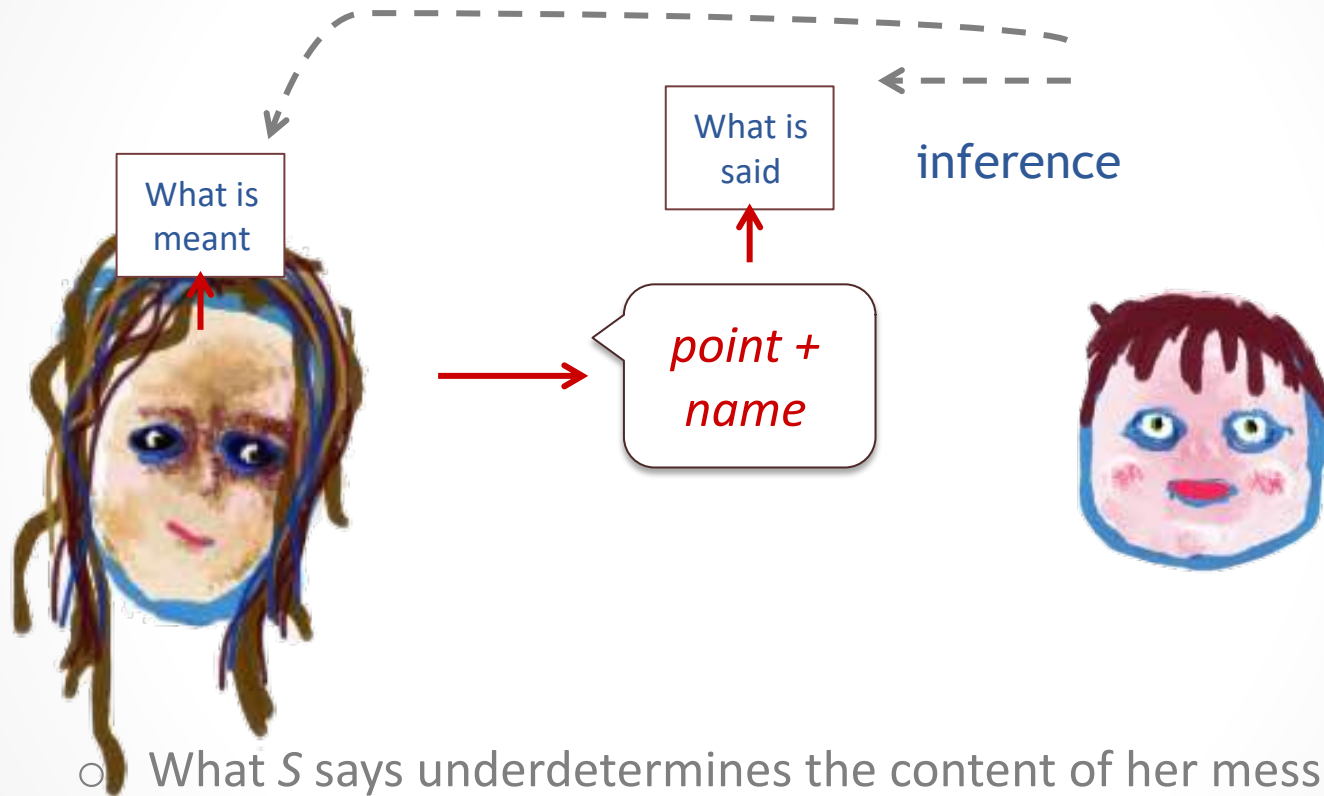


# Ostensive-inferential communication (Sperber & Wilson 1996)



- What *S* says underdetermines the content of her message.
- *H* must recover content of *S*'s message.

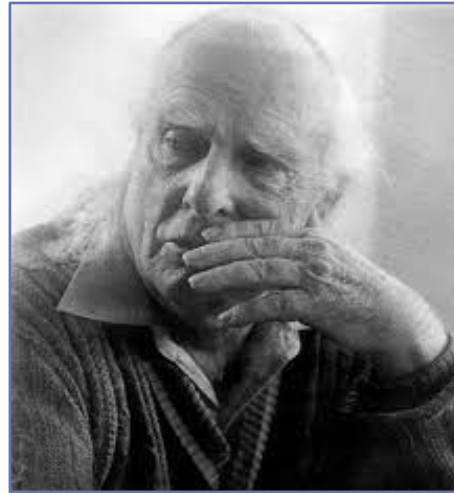
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# Grice's Cooperative Principle



“Our talk exchanges do not normally consist of a succession of disconnected remarks, and would not be rational if they did. They are characteristically ... cooperative efforts; and each participant recognizes in them, to some extent, a common purpose or set of purposes, or at least a mutually accepted direction. ... We might then formulate a rough general principle which participants will be expected (ceteris paribus) to observe, namely: Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged. One might label this the Cooperative Principle.” (Grice 1989)

# The Cooperative Principle

## Grice (1989)

- We can infer a speaker's intended message by interpreting what she says in a manner that make her utterance a contribution to the common conversational goal.
  - Tomasello calls this “cooperative reasoning” (2008)
  - Infants must engage in cooperative reasoning to acquire language



# What is joint action? (Tomasello 2008 via Bratman 1999)

Joint action implies (at least):

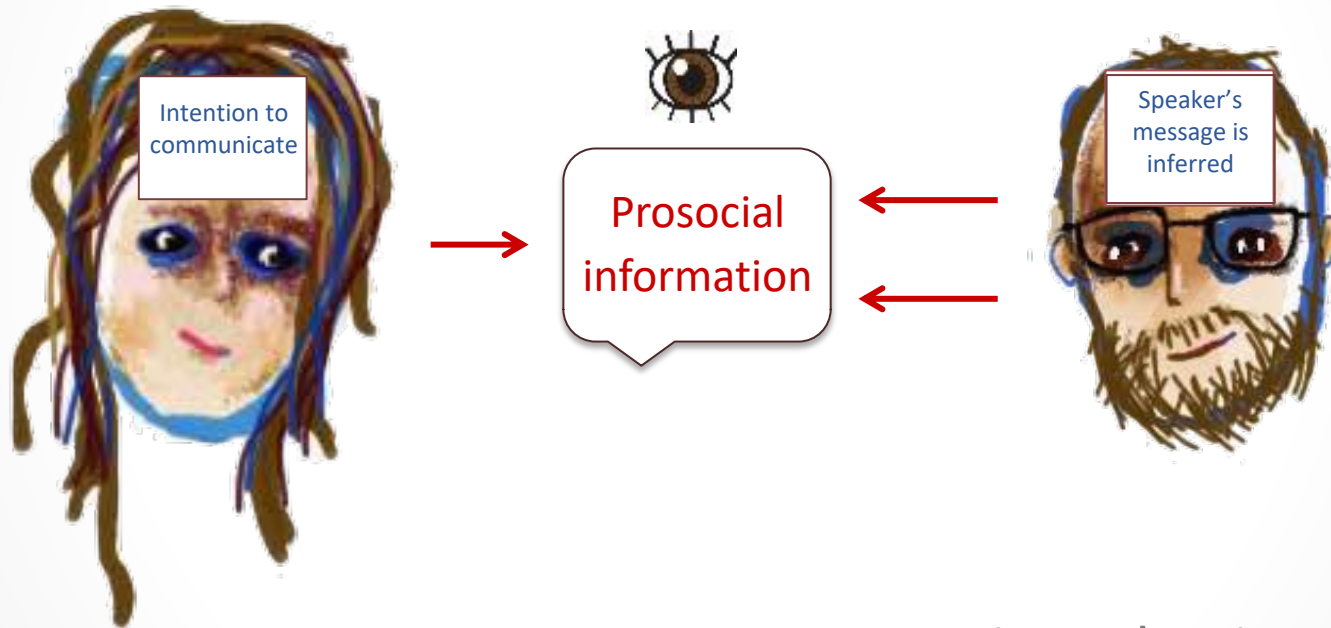
1. A plural number of agents acting in pursuit of a common goal  $g$ .
2. Agents *act intentionally* to support one another's contributions to the achievement of  $g$  –
  - e.g., by investing time and effort (i.e. paying a cost) to help one another's attempts to achieve sub-goals of  $g$ .
3. Common knowledge of (1) and (2) among agents.

# Why is communication a form of joint action?

In communicative interaction:

1.  $S$  and  $H$  act intentionally to achieve a **common goal  $g$**  – namely the state in which  $H$  understands  $S$ 's communicative intention.
2.  $S$  and  $H$  act intentionally **to support one another's** contributions to the achievement of  $g$  –
  - e.g.,  $S$  crafts messages to facilitate  $H$ 's interpretation;  $H$  “cooperatively attends” and uses “cooperative reasoning” to make inferences about  $S$ 's underlying goal.
3. Common knowledge of (1) and (2) among agents.

# Cooperative communication (Tomasello 2008, Moore 2018)



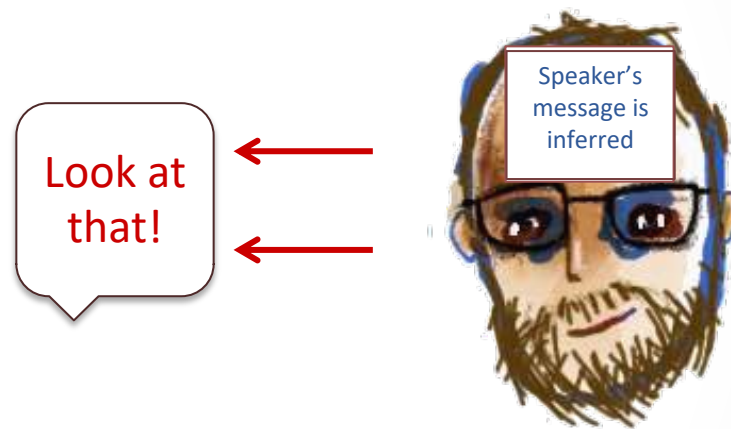
- *S* volunteers prosocial information

- *H* motivated to interpret iff expects reward

# Why is communication a joint action?

“This process occurs because both participants know together and trust together the cooperative motivations involved.”

(Tomasello 2008, p.90; see also Heintz & Scott-Phillips 2022)



# Gricean communication evolved for Stag Hunts

Tomasello's view (e.g. 2008, Tomasello et al. 2012):

- Trust develops in **Stag Hunt** situations (e.g. Bullinger et al. 2011; Tomasello et al. 2012; Duguid et al. 2014), because benefits are **mutual**.
- '**Gricean cooperative communication**' enables humans to excel in Stag Hunts (see Moore 2017d).
  - recursive mindreading
  - joint action
  - cooperative reasoning



# Pointing comprehension in great apes



## ○ object choice tasks

- children 12 months > chance (Behne et al. 2012)
- so are dogs (Hare & Tomasello 1999)
- **chimpanzees** at chance (Tomasello, Call & Gluckman 1997; Hare & Tomasello 2004; Herrmann & Tomasello 2006)



## The standard view: strong discontinuity

The LCA of *Pan* and *Homo* was not a Gricean communicator:

- chimpanzees do not engage in collaborative activity (Tomasello 2008),
- they fail to communicate pro-socially (Tomasello 2008, 2014).

After the *Homo-Panini* clade split (6mya):

→ an ‘improbable moral revolution’ (Habermas 2011)  
enabled ‘Gricean cooperative communication’.

- This revolution was somehow tied to **Stag Hunt** contexts (Tomasello et al. 2012; Moore 2017d).



*Proaethropus afaensis*, by Mike Keeseey:  
<http://3bmonkeybrain.blogspot.de>.

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